

## **REMARKS**

The Office Action dated March 19, 2007 has been received and carefully noted. The following remarks, are submitted as a full and complete response thereto. Claims 9-18, 20-26 and 29-33 are submitted for consideration.

Claims 9-16, 20-23, 25, 29-30 and 33 were rejected in the Office Action under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Publication No. 2003/0067926 to Golikeri (hereinafter Golikeri). The rejection is traversed as being based on a reference that neither teaches nor suggests the novel combination of features clearly recited in claims 9-16, 20-23, 25, 29-30 and 33.

Claim 9, upon which claims 10-12 and 20 depend, recites a method for improving the reliability of a computer system including a bus at least one plug-in unit and at least one separate interface circuit corresponding to each of the at least one plug-in unit. The method includes connecting at least one plug-in unit to the bus via the separate interface circuit. The method further includes addressing a respective plug-in unit, via the bus, by addressing operations directed at the respective plug-in unit and which are monitored by the corresponding interface circuit of the respective plug-in unit. The method also includes performing a time duration operation of addressing of the plug-in unit, and checking the state of addressing of the addressed plug-in unit such that (i) when the addressing is ended before expiration of a predetermined period of time, the time duration operation of addressing is terminated and a new time duration operation of addressing is

set to commence at time of next occurrence of addressing, and (ii) when the duration operation of addressing exceeds the predetermined time period, the addressing to that plug-in unit is terminated by the corresponding interface circuit by sending into the bus a signal indicating termination of addressing.

Claim 13, upon which claims 14-18 depend, recites an interface circuit for providing local monitoring capability to a plug-in unit of a computer system. The interface circuit includes a watchdog timer and first means for activating the watchdog timer upon start of an addressing operation directed to the plug-in unit corresponding thereto. The interface circuit also includes second means for sending into the bus a signal indicating termination of addressing, the termination of addressing being effected when the duration of the addressing exceeds a pre-determined time duration for addressing, as measured by the watchdog timer.

Claim 21, upon which claims 22-26 depend, recites a computer system including a bus, at least one plug-in unit and at least one separate interface circuit corresponding to each of the at least one plug-in unit. The computer system includes at least one separate interface circuit corresponding to each of the at least one plug-in unit, where each plug-in unit is connected to the bus via the separate one of the interface circuits. Each of the interface circuits includes a watchdog timer, first means for activating the watchdog timer upon start of an addressing operation directed to the corresponding plug-in unit, and second means for sending into the bus a signal indicating termination of addressing, the

termination of addressing being effected when the duration of the addressing exceeds a predetermined time duration for addressing, as measured by the watchdog timer.

Claim 29, upon which claims 30-33 depend, recites an interface circuit for providing local monitoring capability to a plug-in unit of a computer system. The interface circuit includes a bus and plug-in units connected to the bus via separate interface circuits, thereby connecting each plug-in unit to the bus. The interface circuit also includes a watchdog timer and an activating device configured to activate the watchdog timer upon start of an addressing operation directed to the corresponding plug-in unit. The interface circuit further includes a sending device configured to send a signal into the bus indicating termination of addressing, the termination of addressing being effected when the duration of the addressing exceeds a pre-determined time duration for addressing, as measured by the watchdog timer.

As outlined below, Applicant submits that Golikeri fails to teach or suggest the elements of claims 9-16, 20-23, 25, 29-30 and 33.

Golikeri teaches a system for address management in a distributed communication environment, wherein the system is configured to purge obsolete addresses from an address table for modules in the system. The system of Golikeri generally includes a number of address databases distributed across one or more communication devices. Each address database is maintained independently by a module, and the various modules are interconnected by a bus or backplane so that the modules can coordinate address management across the distributed address databases. In Golikeri, each module monitors

the status of its locally owned address entries in order to identify any locally owned address entries that become obsolete. A locally owned address entry may be considered obsolete if no protocol messages are sent to or from the corresponding directly connected communication device within a predetermined period of time. When a module determines that a locally owned address entry is obsolete, the module purges the locally owned address entry from its address database, and then sends a purge message to the other modules including the obsolete address from the purged address entry. Upon receiving the purge message, the other modules purge the corresponding remotely owned address entry from their respective address databases, thereby synchronizing their respective address databases. Each module may also periodically send a keep-alive message to the other modules identifying each locally owned address that the module considers to be active. Each module also maintains a timer for each remotely owned address entry. A module resets the timer for a particular remotely owned address entry each time the module receives a keep-alive message indicating that the corresponding address is active. The module purges a particular remotely owned address entry if the corresponding timer expires by reaching a predetermined timeout value. Thus, each module eventually purges an obsolete address entry, even if the purge message was not received by all modules.

Applicant submits that Golikeri does not teach or suggest each of the elements recited in claims 9-16, 20-23, 25, 29-30 and 33. In Golikeri, each Ethernet switching module includes an address database which can be added or removed. According to

Golikeri, the address databases of the remaining modules are updated accordingly so that the address entry referring to the removed module is purged. The management and control logic of Golikeri monitors the status of locally owned address entries and maintains the entries. In Golikeri, an aging function is performed by the switching module for detecting obsolete locally owned address entries in its address database. When the addressing is used for processing a certain Ethernet frame, an aging timer is initiated in Golikeri, where there is a certain expiry time after which the address is decided to be obsolete. Thus, in Golikeri, such an obsolete address is then purged from the module's own address database and also from the co-operating module's address database.

Each of claims 9, 21 and 29 recites at least one plug-in unit and at least one separate interface circuit corresponding to each of the at least one plug-in unit and connecting the at least one plug-in unit to the bus via the separate interface circuit. Golikeri does not teach or suggest separate interface circuits, which are connected to each plug-in unit, as recited in claims 9, 21 and 29. In the "Response to Arguments" section, the Office Action indicated that the management/control logic (115, 125 and 135) "interfaces" with other components of the Ethernet switching module in order to manage and control the operations of the Ethernet switching module, so the Office Action concluded that management/control logic is equivalent to interface circuit recited in the pending claims. However, there is no teaching or suggestion in Golikeri of connecting the at least one plug-in unit (Ethernet switching module) to the bus via the separate

interface circuit (management/control logic). Instead, as noted in the Office Action, the management/control logic of Golikeri is used for managing and controlling the operations of the Ethernet switching module and not for connecting the Ethernet switching module to the bus, as recited in the pending claims. Paragraph 0053 of Golikeri discloses that the management/control logic provides an IMC service which supports reliable and unreliable transfers over a dual-ring bus. However, Golikeri does not teach that the IMC service is used to connect the at least one plug-in unit to the bus via the separate interface circuit, as recited in the pending claims.

Furthermore, claims 9, 21 and 29 also recite a time duration operation of addressing the plug-in units, whereby, the state of addressing of the plug-in units is checked by timing, and when a time duration of addressing is exceeded, the addressing to the specific plug-in unit is terminated. Golikeri teaches timing the duration an address resides in an address table to determine when an address is no longer used. The presently pending claims, on the other hand, recite monitoring the duration that a particular device is being addressed by another device through the bus. As recited in the presently pending claims, when a device is being addressed or called for more than a predetermined duration, the present invention recognizes this event and terminates the addressing function, which prevents the system from becoming paralyzed in a continual addressing state. Thus, the addressing feature of the present invention is distinct from the address table synchronization of Golikeri.

Claim 13 also recites means for activating a watchdog timer upon startup of an addressing operation directed to a plug-in unit, as discussed above with respect to claim 9. Furthermore, claim 13 recites a second means for sending into the bus a signal indicating termination of the addressing process when the duration of the addressing exceeds a pre-determined time duration as measured by the watchdog timer. There is no teaching or suggestion in Golikeri of sending into the bus a signal indicating termination of the addressing process when the duration of the addressing exceeds a pre-determined time duration as measured by the watchdog timer, as recited in claim 13. In the “Response to Arguments” section, the Office Action alleged that sending a purge message, to other modules, to indicate that a locally owned address is deleted from a local database, as disclosed in Golikeri, is equivalent to the second means for sending into the bus a signal indicating termination of the addressing process when the duration of the addressing exceeds a predetermined time duration as measured by the watchdog timer, as recited in claim 13. Claim 13 recites that the signal indicates the termination of a timed out addressing process and not the deletion of an address from a local database, as disclosed in Golikeri. Therefore, Golikeri does not teach or suggest the second means for sending into the bus a signal indicating termination of the addressing process when the duration of the addressing exceeds a predetermined time duration as measured by the watchdog timer, as recited in claim 13.

As noted above, Golikeri is directed to synchronizing address tables based upon the age of an address in the table, while the claimed invention is directed to timing an

addressing process to determine when the addressing process has gotten stuck in an indefinite loop, and the present invention stops the indefinite loop after a watchdog timer times out. There is no teaching or suggestion in Golikeri of activating a watchdog timer upon startup of an addressing operation directed to a plug-in unit, as recited in claim 13. In the "Response to Arguments" section, the Office Action alleged that paragraph 0060 of Golikeri teaches that a timer is reset upon a command to process a local address. Thus, the Office Action concluded that Golikeri teaches starting a timer upon startup of an address operation. However, as noted above, in Golikeri the timer is reset upon a command process to a local address and not when an addressing operation directed to a plug-in unit is started, as recited in claim 13. Therefore, Applicants respectfully assert that the rejection under 35 U.S.C. §102(e) should be withdrawn because Golikeri fails to teach or suggest each feature of claims 9-16, 20-23, 25, 29-30 and 33..

Claims 17-18, 24, 26, 28, 31 and 32 were rejected under 35 U.S.C. 103(a) as being unpatentable over Golikeri in view of Microsoft Computer Dictionary. The Office Action took the position that Golikeri teaches each and every limitation recited in claims 17-18, 24, 26, 28, 31 and 32 with the exception of the Compact PCI bus. Therefore, the Office Action combined the teachings of Golikeri and Microsoft Computer Dictionary to yield all of the elements of claims 17-18, 24, 26, 28, 31 and 32. The rejection is traversed as being based on references that neither teach nor suggest the novel combination of features clearly recited in claims 13, 21 and 29, upon which claims 17-18, 24, 26, 28, 31 and 32 depend.



The Microsoft Computer Dictionary does not cure any of the deficiencies of Golikeri as outlined above. Specifically, the Microsoft Computer Dictionary does not teach or suggest at least one plug-in unit and at least one separate interface circuit corresponding to each of the at least one plug-in unit, connecting the at least one plug-in unit to the bus via the separate interface circuit and a time duration operation of addressing the plug-in units, whereby, the state of addressing of the plug-in units is checked by timing, and when a time duration of addressing is exceeded, the addressing to the specific plug-in unit is terminated, as recited in claim 21, upon which claims 24 and 26 depend. The Microsoft Computer Dictionary does not teach or suggest means for activating a watchdog timer upon startup of an addressing operation directed to a plug-in unit and a second means for sending into the bus a signal indicating termination of the addressing process when the duration of the addressing exceeds a predetermined time duration as measured by the watchdog timer, as recited in claims 13 and 29, upon which claims 17-18 and 31-32 depend. Therefore, Applicants respectfully assert that the rejection under 35 U.S.C. §103(a) should be withdrawn because neither Golikeri nor Microsoft Computer Dictionary, whether taken singly or combined, teaches or suggests each feature of claims 13, 21 and 29 and hence dependent claims 17-18, 24, 26, 28, 31 and 32.

As noted previously, claims 9-18, 20-26 and 29-33 recite subject matter which is neither disclosed nor suggested in the prior art references cited in the Office Action. It is

therefore respectfully requested that all of claims 9-18, 20-26 and 29-33 be allowed and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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